



# ENTERED

456  
MAR 22 2002  
CENTER 1600/2900

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/869,677A

DATE: 03/12/2002

TIME: 10:07:12

Input Set : A:\KC01004US Sequence Listing.txt

Output Set: N:\CRF3\03122002\I869677A.raw

## RECEIVED

MAR 26 2002

OFFICE OF PETITIONS

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4 <110> APPLICANT: ACTINOVA LTD
6 <120> TITLE OF INVENTION: STREPTOCOCCAL ABC TRANSPORTER PROTEIN
8 <130> FILE REFERENCE: KC01004US
C--> 10 <140> CURRENT APPLICATION NUMBER: US/09/869,677A
C--> 10 <141> CURRENT FILING DATE: 2002-01-08
10 <150> PRIOR APPLICATION NUMBER: GB 9828880.6
11 <151> PRIOR FILING DATE: 1998-12-31
13 <160> NUMBER OF SEQ ID NOS: 9
15 <170> SOFTWARE: PatentIn Ver. 2.1
17 <210> SEQ ID NO: 1
18 <211> LENGTH: 893
19 <212> TYPE: DNA
20 <213> ORGANISM: Streptococcus pyogenes
22 <220> FEATURE:
23 <221> NAME/KEY: CDS
24 <222> LOCATION: (1)..(861)
26 <400> SEQUENCE: 1
27 tcg tcg act ggc gct aaa act gct aag agt gat aaa tta aaa gtc gtg 48
28 Ser Ser Thr Gly Ala Lys Thr Ala Lys Ser Asp Lys Leu Lys Val Val
29 1 5 10 15
30 gca acc aat tca att att gcc gac atg aca aaa gct att gct ggt gat 96
31 Ala Thr Asn Ser Ile Ile Ala Asp Met Thr Lys Ala Ile Ala Gly Asp
32 20 25 30
33 aaa atc gat ctg cac agc att gtg cca atc ggt caa gac cct cat gag 144
34 Lys Ile Asp Leu His Ser Ile Val Pro Ile Gly Gln Asp Pro His Glu
35 35 40 45
36 tac gaa cca tta cca gaa gat gct gaa aaa aca agt aat gct gat gtg 192
37 Tyr Glu Pro Leu Pro Glu Asp Ala Glu Lys Thr Ser Asn Ala Asp Val
38 50 55 60
39 att ttc tat aat ggt atc aat cta gaa gat ggc ggg caa gct tgg ttc 240
40 Ile Phe Tyr Asn Gly Ile Asn Leu Glu Asp Gly Gly Gln Ala Trp Phe
41 65 70 75 80
42 acc aaa cta gtg aaa aat gct caa aaa acg aaa aac aaa gat tac ttt 288
43 Thr Lys Leu Val Lys Asn Ala Gln Lys Thr Lys Asn Lys Asp Tyr Phe
44 85 90 95
45 gcc gtg tct gat ggc att gat gtg att tac ttg gaa ggt gca agc gaa 336
46 Ala Val Ser Asp Gly Ile Asp Val Ile Tyr Leu Glu Gly Ala Ser Glu
47 100 105 110
49 aaa gga aaa gaa gat cca cat gct tgg tta aat ctc gaa aac gga atc 384
50 Lys Gly Lys Glu Asp Pro His Ala Trp Leu Asn Leu Glu Asn Gly Ile
51 115 120 125
52 att tat tca aaa aac att gcc aaa caa ttg att gca aag gat cct aaa 432
53 Ile Tyr Ser Lys Asn Ile Ala Lys Gln Leu Ile Ala Lys Asp Pro Lys

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54      130      135      140
55 aac aaa gaa act tat gaa aag aac cta aaa gct tat gtg gct aaa ttg 480
56 Asn Lys Glu Thr Tyr Glu Lys Asn Leu Lys Ala Tyr Val Ala Lys Leu
57 145      150      155      160
58 gaa aaa cta gac aaa gaa gcc aaa tca aaa ttt gat gct att gca gaa 528
59 Glu Lys Leu Asp Lys Glu Ala Lys Ser Lys Phe Asp Ala Ile Ala Glu
60      165      170      175
61 aat aaa aaa ttg att gtg act agt gaa ggc tgc ttc aag tac ttt tca 576
62 Asn Lys Lys Leu Ile Val Thr Ser Glu Gly Cys Phe Lys Tyr Phe Ser
63      180      185      190
64 aaa gct tac ggt gtc cca tct gct tat atc tgg gaa att aac acc gaa 624
65 Lys Ala Tyr Gly Val Pro Ser Ala Tyr Ile Trp Glu Ile Asn Thr Glu
66      195      200      205
67 gaa gaa gga aca cca gat caa att tca tca ttg att gaa aaa cta aaa 672
68 Glu Glu Gly Thr Pro Asp Gln Ile Ser Ser Leu Ile Glu Lys Leu Lys
69      210      215      220
70 gtc atc aag cca tct gcg ctt ttt gta gag tca agt gtc gat aga cgc 720
71 Val Ile Lys Pro Ser Ala Leu Phe Val Glu Ser Ser Val Asp Arg Arg
72 225      230      235      240
73 cct atg gaa act gtt tct aaa gat agt ggt att cct att tat tct gag 768
74 Pro Met Glu Thr Val Ser Lys Asp Ser Gly Ile Pro Ile Tyr Ser Glu
75      245      250      255
76 atc ttt aca gat tca att gct aaa aaa ggt aaa cct ggc gat agt tat 816
77 Ile Phe Thr Asp Ser Ile Ala Lys Lys Gly Lys Pro Gly Asp Ser Tyr
78      260      265      270
79 tat gct atg atg aaa tgg aac ctt gac aaa att tct gaa ggt cta 861
80 Tyr Ala Met Met Lys Trp Asn Leu Asp Lys Ile Ser Glu Gly Leu
81      275      280      285
82 gcaaaataag ataacaataa agcacagcga tt 893
85 <210> SEQ ID NO: 2
86 <211> LENGTH: 287
87 <212> TYPE: PRT
88 <213> ORGANISM: Streptococcus pyogenes
90 <400> SEQUENCE: 2
91 Ser Ser Thr Gly Ala Lys Thr Ala Lys Ser Asp Lys Leu Lys Val Val
92 1 5 10 15
93 Ala Thr Asn Ser Ile Ile Ala Asp Met Thr Lys Ala Ile Ala Gly Asp
94 20 25 30
95 Lys Ile Asp Leu His Ser Ile Val Pro Ile Gly Gln Asp Pro His Glu
96 35 40 45
98 Tyr Glu Pro Leu Pro Glu Asp Ala Glu Lys Thr Ser Asn Ala Asp Val
99 50 55 60
100 Ile Phe Tyr Asn Gly Ile Asn Leu Glu Asp Gly Gly Gln Ala Trp Phe
101 65 70 75 80
102 Thr Lys Leu Val Lys Asn Ala Gln Lys Thr Lys Asn Lys Asp Tyr Phe
103 85 90 95
104 Ala Val Ser Asp Gly Ile Asp Val Ile Tyr Leu Glu Gly Ala Ser Glu
105 100 105 110
106 Lys Gly Lys Glu Asp Pro His Ala Trp Leu Asn Leu Glu Asn Gly Ile

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107           115           120           125
108 Ile Tyr Ser Lys Asn Ile Ala Lys Gln Leu Ile Ala Lys Asp Pro Lys
109           130           135           140
110 Asn Lys Glu Thr Tyr Glu Lys Asn Leu Lys Ala Tyr Val Ala Lys Leu
111 145           150           155           160
112 Glu Lys Leu Asp Lys Glu Ala Lys Ser Lys Phe Asp Ala Ile Ala Glu
113           165           170           175
114 Asn Lys Lys Leu Ile Val Thr Ser Glu Gly Cys Phe Lys Tyr Phe Ser
115           180           185           190
116 Lys Ala Tyr Gly Val Pro Ser Ala Tyr Ile Trp Glu Ile Asn Thr Glu
117           195           200           205
118 Glu Glu Gly Thr Pro Asp Gln Ile Ser Ser Leu Ile Glu Lys Leu Lys
119           210           215           220
120 Val Ile Lys Pro Ser Ala Leu Phe Val Glu Ser Ser Val Asp Arg Arg
121 225           230           235           240
122 Pro Met Glu Thr Val Ser Lys Asp Ser Gly Ile Pro Ile Tyr Ser Glu
123           245           250           255
124 Ile Phe Thr Asp Ser Ile Ala Lys Lys Gly Lys Pro Gly Asp Ser Tyr
125           260           265           270
126 Tyr Ala Met Met Lys Trp Asn Leu Asp Lys Ile Ser Glu Gly Leu
127           275           280           285
129 <210> SEQ ID NO: 3
130 <211> LENGTH: 27
131 <212> TYPE: DNA
132 <213> ORGANISM: Artificial Sequence
134 <220> FEATURE:
135 <223> OTHER INFORMATION: Description of Artificial Sequence: PCR primer
137 <400> SEQUENCE: 3
138 tagtagcgaa ttcgtcgact ggcgcta 27
140 <210> SEQ ID NO: 4
141 <211> LENGTH: 28
142 <212> TYPE: DNA
143 <213> ORGANISM: Artificial Sequence
145 <220> FEATURE:
146 <223> OTHER INFORMATION: Description of Artificial Sequence: PCR primer
148 <400> SEQUENCE: 4
149 agcacaactc gagaatcgct gtgcttta 28
151 <210> SEQ ID NO: 5
152 <211> LENGTH: 17
153 <212> TYPE: PRT
154 <213> ORGANISM: Streptococcus pyogenes
156 <400> SEQUENCE: 5
157 Lys Gln Leu Ile Ala Lys Asp Pro Lys Asn Lys Glu Thr Tyr Glu Lys
158 1 5 10 15
159 Asn
162 <210> SEQ ID NO: 6
163 <211> LENGTH: 19
164 <212> TYPE: PRT
165 <213> ORGANISM: Streptococcus pyogenes

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167 <400> SEQUENCE: 6
168 Glu Ile Asn Thr Glu Glu Glu Gly Thr Pro Asp Gln Ile Ser Ser Leu
169   1               5               10               15
170 Ile Glu Lys
173 <210> SEQ ID NO: 7
174 <211> LENGTH: 16
175 <212> TYPE: PRT
176 <213> ORGANISM: Streptococcus pyogenes
178 <400> SEQUENCE: 7
179 Glu Ser Ser Val Asp Arg Arg Pro Met Glu Thr Val Ser Lys Asp Ser
180   1               5               10               15
182 <210> SEQ ID NO: 8
183 <211> LENGTH: 21
184 <212> TYPE: PRT
185 <213> ORGANISM: Streptococcus pyogenes
187 <400> SEQUENCE: 8
188 Thr Asp Ser Ile Ala Lys Lys Gly Lys Pro Gly Asp Ser Tyr Tyr Ala
189   1               5               10               15
190 Met Met Lys Trp Asn
191               20
194 <210> SEQ ID NO: 9
195 <211> LENGTH: 13
196 <212> TYPE: PRT
197 <213> ORGANISM: Streptococcus pyogenes
199 <400> SEQUENCE: 9
200 Gln Asp Pro His Glu Tyr Glu Pro Leu Pro Glu Asp Val
201   1               5               10

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**VERIFICATION SUMMARY**

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L:10 M:270 C: Current Application Number differs, Replaced Current Application No

L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date